

This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.0008 MGD wastewater treatment plant. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260 *et seq.*

1. Facility Name and Mailing Address: Walk Residence STP
50 Randall Road
Stafford, VA 22554

Facility Location: 50 Randall Road
Stafford, VA 22554

Facility Contact Name: Douglas J. Crooks
Facility E-mail Address: Crooks365@aol.com

SIC Code : 4952 WWTP

County: Stafford

Telephone Number: 540-840-0192
2. Permit No.: VA0089630

Other VPDES Permits associated with this facility: None
Other Permits associated with this facility: None
E2/E3/E4 Status: N/A

Expiration Date of previous permit: April 24, 2013
3. Owner Name: Robert D. and Angela S. Walk
Owner Contact/Title: Owner
Owner E-mail Address: awalk50@gmail.com; treborklaw@gmail.com

Telephone Number: 540-659-7289
4. Application Complete Date: 1/30/2013
Permit Drafted By: Joan C. Crowther
Draft Permit Reviewed By: Alison Thompson
Public Comment Period : Start Date: 2/22/13

Date Drafted: 11/20/12
Date Reviewed: 11/29/12
End Date: 3/25/13
5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination – The tier ammonia effluent limitation timeframe in the past and proposed VPDES permits is based on the tier timeframe expressed in the *Policy for the Potomac River Embayments* and not in the Flow Frequency Determination Memorandum dated November 6, 1997.

Receiving Stream Name : Accokeek Creek, UT
Drainage Area at Outfall: 0.54 sq.mi.
Stream Basin: Potomac River
Section: 1b
Special Standards: b
7Q10 Low Flow: 0.0 MGD
1Q10 Low Flow: 0.0 MGD
30Q10 Low Flow: 0.0 MGD
Harmonic Mean Flow: 0.0 MGD

Stream Code: XHZ
River Mile: 0.22
Subbasin: Potomac River
Stream Class: III
Waterbody ID: VAN-A29R
7Q10 High Flow: 0.0 MGD
1Q10 High Flow: 0.0 MGD
30Q10 High Flow: 0.0 MGD
30Q5 Flow: 0.0 MGD

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

- | | |
|---|--|
| <input checked="" type="checkbox"/> State Water Control Law | <input checked="" type="checkbox"/> EPA Guidelines |
| <input checked="" type="checkbox"/> Clean Water Act | <input checked="" type="checkbox"/> Water Quality Standards |
| <input checked="" type="checkbox"/> VPDES Permit Regulation | <input checked="" type="checkbox"/> Other (<i>Policy for the Potomac Embayment</i>
(9VAC25-415 et seq.)* |
| <input checked="" type="checkbox"/> EPA NPDES Regulation | |

7. Licensed Operator Requirements: Class IV

8. Reliability Class: Class I

9. Permit Characterization:

- | | | |
|---|---|---|
| <input checked="" type="checkbox"/> Private | <input type="checkbox"/> Effluent Limited | <input type="checkbox"/> Possible Interstate Effect |
| <input type="checkbox"/> Federal | <input checked="" type="checkbox"/> Water Quality Limited | <input type="checkbox"/> Compliance Schedule Required |
| <input type="checkbox"/> State | <input type="checkbox"/> Toxics Monitoring Program Required | <input type="checkbox"/> Interim Limits in Permit |
| <input type="checkbox"/> POTW | <input type="checkbox"/> Pretreatment Program Required | <input type="checkbox"/> Interim Limits in Other Document |
| <input checked="" type="checkbox"/> TMDL | | |

*Historical Note - Development of the *Policy for the Potomac River Embayments* (9 VAC 25-415 et seq.):

The State Water Control Board adopted the Potomac Embayment Standards (PES) in 1971 to address serious nutrient enrichment problems evident in the Virginia embayments and Potomac River at the time. These standards applied to sewage treatment plants discharging into Potomac River embayments in Virginia and for expansions of existing plants discharging into the non-tidal tributaries of these embayments. The standards were effluent limitations for BOD₅, unoxidized nitrogen, total phosphorus, and total nitrogen:

Parameter	PES Standard (monthly average)
BOD ₅	3 mg/L
Unoxidized Nitrogen	1 mg/L (April – October)
Total Phosphorus	0.2 mg/L
Total Nitrogen	8 mg/L (when technology is available)

Questions also arose due to the fact that the PES were blanket effluent limitations that applied equally to different bodies of water. Therefore, in 1978, the State Water Control Board committed to reevaluate the PES. In 1984, a major milestone was reached when the Virginia Institute of Marine Science (VIMS) completed state-of-the-art models for each of the embayments. The Board then selected the Northern Virginia Planning District Commission (NVPDC) to conduct wasteload allocation studies of the Virginia embayments using the VIMS models. In 1988, these studies were completed and effluent limits that would protect the embayments and the main stem of the Potomac River were developed for each major facility.

In 1991 and 1992, several Northern Virginia jurisdictions with embayment treatment plants submitted a petition to the Board requesting that the Board address the results of the VIMS/NVPDC studies. Their petition requested revised effluent limitations and a defined modeling process for determining effluent limitations.

The recommendations in the petition were designed to protect the extra sensitive nature of the embayments along with the Potomac River that have become a popular recreational resource during recent years. The petition included requirements more stringent than would be applied using the results of the modeling/allocation work conducted in the 1980s. With the inherent uncertainty of modeling, the petitioners question whether the results of modeling would provide sufficient protection for the embayments. By this petition, the local governments asked for continued special protection for the embayments based upon a management approach that uses stringent effluent limits. They believed this approach had proven successful over the past two decades. In

addition, the petition included a modeling process that would be used to determine if more stringent limits would be needed in the future due to increased wastewater discharges.

The State Water Control Board adopted the petition, with revisions, as a regulation on September 12, 1996. The regulation is entitled *Policy for the Potomac River Embayments* (9 VAC25-415 *et seq.*). On the same date, the Board repealed the old PES. The new regulation became effective on April 3, 1997, and contained the following effluent limits:

Parameter	PES Standard (monthly average)
cBOD ₅	5 mg/L
TSS	6 mg/L
Total Phosphorus	0.18 mg/L
Ammonia as Nitrogen	1.0 mg/L

10. Wastewater Sources and Treatment Description:

The facility is a privately owned wastewater treatment plant serving one single family home with a design flow of 0.0008 MGD. On October 20, 2000, the construction of the plant was completed and a verbal Certificate to Operate was issued by the Virginia Department of Health on October 31, 2000.

The wastewater treatment plant consists of two 1,000 gallons septic tanks (operated in series), a dosing tank, two biological filtration sand filters, one 500 gallon sedimentation/filtration tank including chemical addition of aluminum salts, followed by tablet chlorination, chlorine contact tank, tablet dechlorination and post aeration via diffused air.

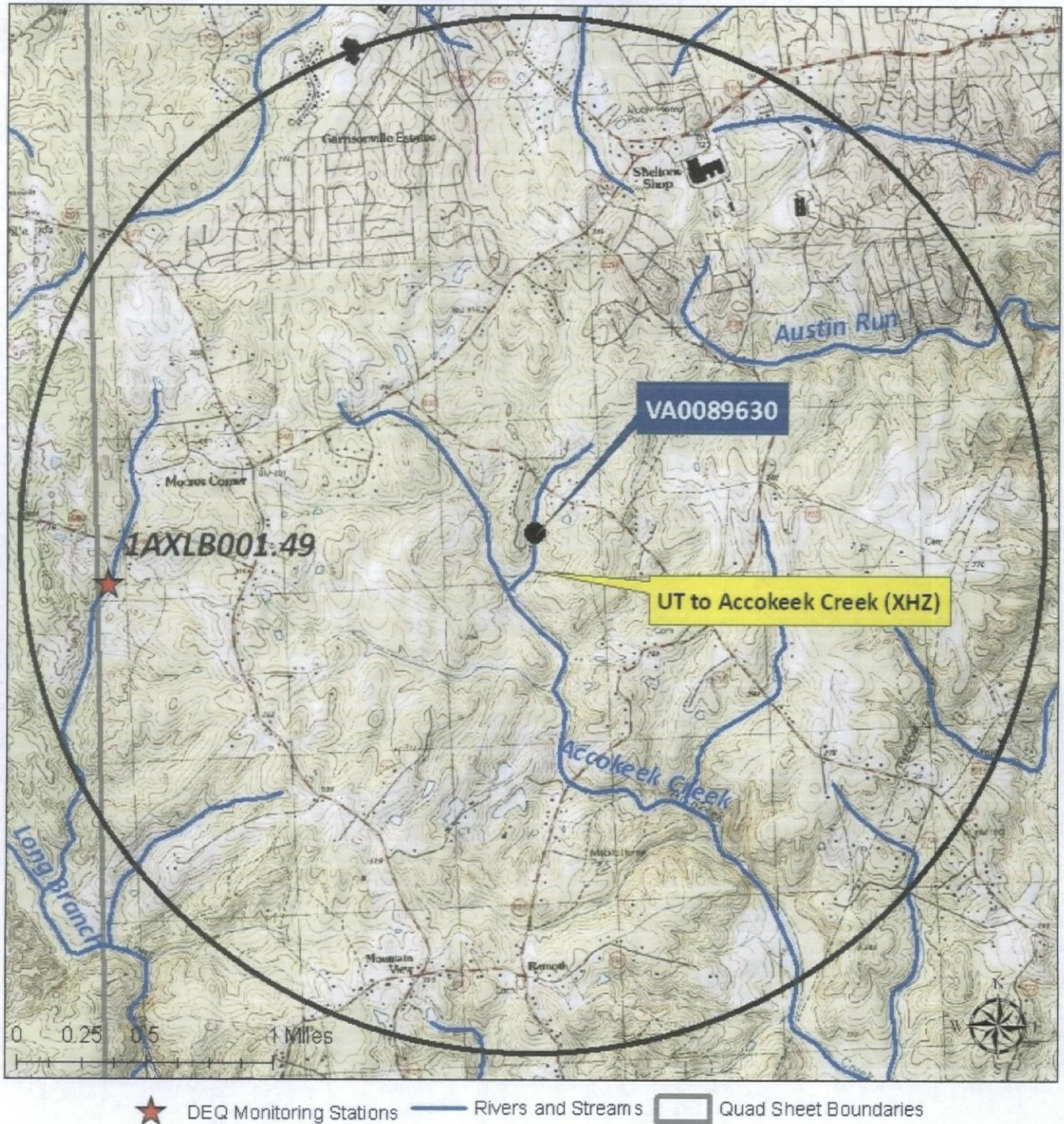
See Attachment 2 for a facility schematic/diagram.

TABLE 1 -- Outfall Description

Outfall Number	Discharge Sources	Treatment	Design Flow(s)	Outfall Latitude and Longitude
001	Domestic Wastewater	See Item 10 above.	0.0008 MGD	38° 26' 49" N 77° 28' 06" W

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USGS Topographic Maps

183A - Storck and 182B - Stafford**11. Sludge Treatment and Disposal Methods:**

Over a year period, less than 0.1 dry metric tons of sewage sludge is transported to Aquia Advanced Wastewater Treatment Plant (VA0060968) for disposal.

12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge

There are no discharges or intakes within a 2 mile radius of the facility's discharge point. DEQ has a freshwater probabilistic monitoring station location approximately 0.2 miles downstream of Route 648 on an unnamed tributary to Long Branch in Stafford County.

13. Material Storage:

TABLE 2 - Material Storage		
Materials Description	Volume Stored	Spill/Stormwater Prevention Measures
Alum salts	15 gallons	Stored in a covered container in the control building
Chlorine tablets	45 lbs	Stored in a covered container in the control building
De-chlor tablets	45 lbs	Stored in a covered container in the control building

14. Site Inspection:

Performed by Sharon Allen on July 20, 2010. (See Attachment 3).

15. Receiving Stream Water Quality and Water Quality Standards:**a) Ambient Water Quality Data**

There is no monitoring data for the receiving stream, an unnamed tributary to Accokeek Creek (XHZ).

The nearest downstream DEQ monitoring station with ambient water quality data is Station 1aACC006.13, located on Accokeek Creek at the Route 608 Bridge crossing. Station 1aACC006.13 is located approximately 8.9 rivermiles downstream from Outfall 001. The following is the water quality summary for this segment of Accokeek Creek, as taken from the Draft 2012 Integrated Report*:

This DEQ station 1aACC006.13 is located within the Potomac River Basin's Section 1b, classified as Class III waters with a special standard designation of b (*Policy for the Potomac River Embayments* (9VAC25-415 *et seq.*)). There is also a citizen monitoring station 1aACC-SCRAVEN-ALL that is located near the Route 609 Bridge, approximately 1.6 miles downstream of DEQ station 1aACC006.13.

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. The aquatic life and wildlife uses are considered fully supporting. The fish consumption use was not assessed.

b) 303(d) Listed Stream Segments and Total Maximum Daily Loads (TMDLs)

Impairment Information in the 2012 Integrated Report*							
Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Accokeek Creek	Recreation	<i>E. coli</i>	6.55 miles	No	N/A	N/A	2013**

*The Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently being finalized and prepared for release.

*****The Bacteria TMDL for Accokeek Creek is currently under development and will be finished in 2013. The TMDL will include a WLA for this facility in terms of E. coli. The draft WLA for this facility is 1.39E+09 cfu/year of E. coli.***

The planning statement dated November 6, 2012 is found in Attachment 4.

c) Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, Accokeek Creek, UT is located within Section 1b of the Potomac River Basin, Potomac River Subbasin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

Freshwater Water Quality/Wasteload Allocation Analysis (Attachment 5) details other water quality criteria applicable to the receiving stream. The receiving stream's 7Q10 is 0.0 MGD; therefore, when determining the water quality criteria applicable to the receiving stream, only the facility's effluent pH and temperature 90th percentile value used in the Freshwater Water Quality/Wasteload Allocation Analysis spreadsheet. The facility's effluent pH 90th percentile value was determined to be 7.38 SU for the monitoring period of July 2007 through September 2012. DEQ's default temperature value of 25°C with a wet season default of 15°C was used. (See Attachment 6 for the facility's pH data.)

Ammonia:

The ammonia effluent limitation for April 1st through October 31st is set by the *Policy for the Potomac River Embayments* (9 VAC 25-415-40). During this period, the ammonia effluent limit is 1.0 mg/L.

During the 1998 VPDES permit issuance process, the existing ammonia effluent limitations for November through March were determined and have been carried forward since then. DEQ's effluent pH (7.5 SU for both summer and winter) and effluent temperature (25°C for the summer and 15°C for the winter) default values were used to determine the ammonia as N criteria. The ammonia as N criteria were determined as follows:

	Acute	Chronic
April – October	11.9 mg/L	2.06 mg/L
November – March	12.3 mg/L	2.13 mg/L

The resulting Ammonia as N effluent limitations for April – October was 3.0 mg/L and for November – March was 3.1 mg/L. (See Attachment 7 for the 1998 ammonia calculations).

The staff re-evaluated pH and temperature of the facility to determine if the ammonia effluent limitations for the period of November 1st through March 31st were still appropriate. This evaluation shown that the ammonia limitation could be relaxed to 9.4 mg/L; however, because the facility has demonstrated that the current 3.1 mg/L ammonia effluent limitation can be complied with, this existing ammonia effluent limitation will remain in the permit. (See Attachment 8 for 2012 ammonia calculation.)

Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/L calcium carbonate) and the effluent's hardness. No facility's effluent or receiving stream hardness is available. Because of this, the average hardness value was determined by using the DEQ's downstream ambient monitoring station (1aACC006.13) stream data for the period of October 1990 through June 2003. The average hardness of this monitoring station is 22.5 mg/L and can be found in Attachment 9. Because the receiving stream's 7Q10 is 0.0 MGD and if the stream hardness value was added to the Freshwater Water Quality/Wasteload Allocation Analysis stream information would not have an effect on the resulting criteria, the downstream ambient monitoring station's hardness value was entered in the Freshwater Water Quality/Wasteload Allocation Analysis' effluent information. The hardness-dependent metals criteria

shown in Freshwater Water Quality/Wasteload Allocation Analysis (Attachment 5) are based on this average value.

Bacteria Criteria: The Virginia Water Quality Standards (9VAC25-260-170 B.) states sewage discharges shall be disinfected to achieve the following criteria:

E. coli bacteria per 100 ml of water shall not exceed a monthly geometric mean of 126 n/100 mls for a minimum of four weekly samples taken during any calendar month.

d) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Accotek Creek, UT, is located within Section 1b of the Potomac River Basin. This section has been designated with a special standard of b.

Special Standard "b" (*Policy for the Potomac River Embayments*) established effluent standards for all sewage plants discharging into Potomac River embayments and for expansions of existing plants discharging into non-tidal tributaries of these embayments. 9VAC25-415, *Policy for the Potomac Embayments* controls point source discharges of conventional pollutants into the Virginia embayment waters of the Potomac River, and their tributaries, from the fall line at Chain Bridge in Arlington County to the Route 301 Bridge in King George County. The regulation sets effluent limits for BOD₅, total suspended solids, phosphorus, and ammonia, to protect the water quality of these high profile waterbodies.

e) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched on November 19, 2012, for records to determine if there are threatened or endangered species in the vicinity of the discharge. No threatened or endangered species were identified. (See Attachment 10).

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1. The critical flows for the stream are zero and at times the stream flow is comprised of only effluent. It is staff's best professional judgment that such streams are Tier 1. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points are equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLAs) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLA's are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily

effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:

Effluent data obtained from the Discharge Monitoring Reports from the period of January 2008 through September 2012 has been reviewed and determined to be suitable for evaluation. The following effluent limitations were exceeded during this timeframe:

TSS: July 2012; January 2010; April 2009

Total Phosphorus: July 2012; October 2010; January 2010; January 2009; July 2008 and April 2008

Ammonia: October 2010; January 2010; and April 2009

Total Residual Chlorine: January 2010; April 2009; and January 2009

pH: April 2009

DO: April 2009

E.coli: April 2009

cBOD₅: April 2009

The following pollutants require a wasteload allocation analysis: Ammonia as N and Total Residual Chlorine.

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where:

WLA	=	Wasteload allocation
C _o	=	In-stream water quality criteria
Q _e	=	Design flow
Q _s	=	Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
f	=	Decimal fraction of critical flow
C _s	=	Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 is considered to have a 7Q10 and 1Q10 of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C_o.

c) Effluent Limitations Toxic Pollutants, Outfall 001 –

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N:

The ammonia effluent limitation for April 1st through October 31st is set by the *Policy for the Potomac River Embayments* (9 VAC 25-415-40). During this period, the ammonia effluent limit is 1.0 mg/L.

The staff re-evaluated pH and temperature of the facility to determine if the ammonia effluent limitations for the period of November 1st through March 31st were still appropriate. This evaluation shown that the ammonia limitation could be relaxed to 9.4 mg/L; however, because the facility has demonstrated that the current 3.1 mg/L ammonia effluent limitation can be complied with, this existing ammonia effluent limitation will remain in the permit. (See Attachments 7 and 8 for 1998 and 2012 ammonia calculations, respectively.)

2) **Total Residual Chlorine:**

Chlorine is used for disinfection and is potentially in the discharge. Staff calculated WLAs for TRC using current critical flows. In accordance with current DEQ guidance, staff used a default data point of 0.2 mg/L and the calculated WLAs to derive limits. A monthly average of 0.016 mg/L and a weekly average limit of 0.016 mg/L are proposed for this discharge (see Attachment 11 for Total Residual Chlorine calculation).

3) **Metals/Organics:**

No metals or organics data were available for review; therefore, no effluent limits are proposed.

d) **Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants**

No changes to dissolved oxygen (D.O.), carbonaceous biochemical oxygen demand-5 day (cBOD₅), total suspended solids (TSS), Ammonia as N, Total Phosphorus (TP), Total Residual Chlorine, and pH limitations are proposed.

cBOD₅, TSS, Ammonia (April – October) and TP limitations are based on the *Policy for the Potomac River Embayments* (9 VAC 25-415 *et seq.*).

D.O. limitations are based on Water Quality Standards.

Total Residual Chlorine and pH limitations are set at the water quality criteria.

E. coli limitations are in accordance with the Water Quality Standards 9 VAC25-260-170.

e) **Effluent Limitations and Monitoring Summary.**

The effluent limitations are presented in the following table. Limits were established for Flow, cBOD₅, Total Suspended Solids, Ammonia, pH, Dissolved Oxygen, Total Residual Chlorine, *E. coli*, and Total Phosphorus.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 3.785.

Sample Type established in the permit are in accordance with the VPDES Permit Manual recommendations; however, the frequency of analysis were increase from the VPDES Permit Manual's recommendations due to human health concerns from once per year to quarterly during the 2003 permit reissuance. For this permit reissuance, the sample type and frequency of analysis will continue as the previously issued permit.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for cBOD₅ and TSS (or 65% for equivalent to secondary). The limits in this permit are water-quality-based effluent limits and result in greater than 85% removal.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 0.0008 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
		Monthly Average		Weekly Average		Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL		NA		NA	NL	1/3M	EST
pH	3	NA		NA		6.0 S.U.	9.0 S.U.	1/3M	Grab
cBOD ₅	5	5 mg/L	0.02 kg/d	8 mg/L	0.03 kg/d	NA	NA	1/3M	Grab
Total Suspended Solids (TSS)	5	6.0 mg/L	0.02 kg/d	9.0 mg/L	0.03 kg/d	NA	NA	1/3M	Grab
DO	3	NA		NA		5.0 mg/L	NA	1/3M	Grab
Ammonia, as N (April 1 st –October 31 st)	5	1.0 mg/L	0.003 kg/d	1.5 mg/L	0.005 kg/d	NA	NA	1/3M	Grab
Ammonia, as N (November 1 st – March 31 st)	3	3.1 mg/L		3.1 mg/L		NA	NA	1/3M	Grab
<i>E. coli</i> (Geometric Mean) ^{(a) (b)}	3	126 n/100mls		NA		NA	NA	1/YR ^(b)	Grab
Total Residual Chlorine (after contact tank)	2, 3, 4	NA		NA		1.0 mg/L	NA	1/3M	Grab
Total Residual Chlorine (after dechlorination)	3	0.016 mg/L		0.016 mg/L		NA	NA	1/3M	Grab
Total Phosphorus	5	0.18 mg/L	0.0005 kg/d	0.27 mg/L	0.0008 kg/d	NA	NA	1/3M	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. *Policy for the Potomac Embayments*
(9 VAC 25-415 et seq.)

MGD = Million gallons per day.

N/A = Not applicable.

NL = No limit; monitor and report.

S. U. = Standard units.

EST = Estimated.

1/3M = Once every three months.

1/YR = Once per year during July each year.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

^(a) Samples shall be collected between the hours of 10 A.M. and 4 P.M.^(b) The permittee shall sample and submit *E. coli* results at the frequency of once every week during July each year. A total of 4 weekly samples shall be used to calculate the geometric mean.

The quarterly monitoring periods shall be January through March, April through June, July through September, and October through December. The DMR shall be submitted no later than the 10th day of the month following the monitoring period.

20. Other Permit Requirements:

- a) Part I.B. of the permit contains additional chlorine monitoring requirements, quantification levels and compliance reporting instructions.

These additional chlorine requirements are necessary per the Sewage Collection and Treatment Regulations at 9VAC25-70 and by the Water Quality Standards at 9VAC25-260-170. Minimum chlorine residual must be maintained at the exit of the chlorine contact tank to assure adequate disinfection. No more than 10% of the monthly test results for TRC at the exit of the chlorine contact tank shall be <1.0 mg/L with any TRC <0.6 mg/L considered a system failure. Monitoring at numerous STPs has concluded that a TRC residual of 1.0 mg/L is an adequate indicator of compliance with the *E. coli* criteria. *E. coli* limits are defined in this section as well as monitoring requirements to take effect should an alternate means of disinfection be used.

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

21. Other Special Conditions:

- a) 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4 requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. The facility is a PVOTW.
- b) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall maintain a current Operations and Maintenance (O&M) Manual. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M Manual available to Department personnel for review upon request. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.
- c) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.
- d) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200 C, and Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class IV operator.
- e) Reliability Class. The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a reliability Class of I. The facility is required to meet a reliability Class of I based on the effluent location and human health concerns.
- f) Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.
- g) Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2., and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.
- h) TMDL Reopener: This special condition is to allow the permit to reopen if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

22. Changes to the Permit from the Previously Issued Permit:

- a) Special Conditions:
 - 1) Special Conditions for sludge use and disposal were added to the permit. Also, the sludge reopener special condition was added.
- b) Monitoring and Effluent Limitations:
 - 1) Effluent limitation and monitoring frequency for *E.coli* was changed in this draft permit. The VA Water

Quality Standards now require that *E.coli* monitoring be conducted weekly with a minimum of 4 samples to be used to determine a monthly geometric mean. Because of the quarterly monitoring requirement for the other parameter and the design flow of 0.0008 MGD, it is staff's best professional opinion that the *E.coli* monitoring to be conducted once per year during the month of July and sampled weekly for this month. Total Residual Chlorine quarterly monitoring will serve as a surrogate parameter for the *E.coli*. The *E.coli* effluent limitation was changed from 235 n/100mls to 126 n/100mls in accordance with the VA Water Quality Standards.

23. Variances/Alternate Limits or Conditions:

There are no variances/alternate limits or conditions contained in this permit.

24. Public Notice Information:

First Public Notice Date: 2/22/13

Second Public Notice Date: 3/1/13

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3925, joan.crowther@deq.virginia.gov. See Attachment 12 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

25. Additional Comments:

Previous Board Action(s): There has been no previous Board action associated with this VPDES Permit.

Staff Comments: None

Public Comment: No comments were received during the public notice.

EPA Checklist: The checklist can be found in Attachment 13.

VA0089630 Walk Residence Sewage Treatment Plant
Fact Sheet Attachments

Attachment	Description
1	Flow Frequency Determination Memo dated November 6, 1997
2	Facility Schematic/Diagram
3	Site Inspection by DEQ Compliance Staff on July 20, 2010
4	DEQ Planning Statement dated November 6, 2012
5	Freshwater Water Quality Criteria/Wasteload Allocated Analysis dated November 19, 2012
6	Facility's pH data July 2007 – September 2012
7	1998 Ammonia Analysis
8	2012 Ammonia Analysis
9	Accotek Creek's Total Hardness Data October 1990 – June 2003
10	DGIF Threatened and Endangered Species Database Search dated November 19, 2012
11	Total Residual Chlorine Analysis
12	Public Notice
13	EPA Checklist dated November 19, 2012

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION

Water Quality Assessments and Planning

629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Flow Frequency Determination
Randall STP - #VA0089630

TO: M. Sue Heddings, NRO

FROM: Paul E. Herman, P.E., WQAP

DATE: November 6, 1997

COPIES: Ron Gregory, Charles Martin, File

The Randall STP discharges to the Accokeek Creek near Stafford, VA. Stream flow frequencies are required at this site by the permit writer for the purpose of calculating effluent limitations for the VPDES permit.

The USGS conducted several flow measurements on the Accokeek Creek from 1980 to 1983. The measurements were made at the Route 609 bridge near Brooke, VA. The measurements made by the USGS correlated very well with the same day daily mean values from three continuous record gages; one on the Accotink Creek near Annandale, VA #01654000, one on the St. Clements Creek near Clements, MD #01661050, and one on the Beaverdam Swamp near Ark, VA #01670000. The measurements and daily mean values for each gage were plotted by the USGS on a logarithmic graph and a best fit line was drawn through the data points. The required flow frequencies from the reference gages were plotted on their corresponding regression lines and the associated flow frequencies at the measurement site were determined from the graph. The flow value for the measurement site represents an average of the values for each gage.

The flow frequencies at the discharge point were determined by using the values at the measurement site and adjusting them by proportional drainage areas. The data for the reference gages, the measurement site and the discharge point are presented below:

Accotink Creek near Annandale, VA (#01654000):

Drainage Area = 23.5 mi²

1Q10 = 0.24 cfs	High Flow 1Q10 = 3.7 cfs
7Q10 = 0.51 cfs	High Flow 7Q10 = 4.5 cfs
30Q5 = 2.5 cfs	HM = 6.1 cfs

St. Clements Creek near Clements, MD (#01661050):

Drainage Area = 18.5 mi ²	
1Q10 = 0.0 cfs	High Flow 1Q10 = 1.8 cfs
7Q10 = 0.0 cfs	High Flow 7Q10 = 2.5 cfs
30Q5 = 0.35 cfs	HM = 0.0 cfs

Beaverdam Swamp near Ark, VA (#01670000):

Drainage Area = 6.63 mi ²	
1Q10 = 0.0 cfs	High Flow 1Q10 = 0.75 cfs
7Q10 = 0.01 cfs	High Flow 7Q10 = 0.99 cfs
30Q5 = 0.33 cfs	HM = 0.0 cfs

**Accokeek Creek at Route 609 near
Brooke, VA (#01660670):**

Drainage Area = 18.0 mi ²	
1Q10 = 0.0 cfs	High Flow 1Q10 = 0.86 cfs
7Q10 = 0.0 cfs	High Flow 7Q10 = 1.0 cfs
30Q5 = 0.55 cfs	HM = 0.0 cfs

Accokeek Creek at discharge point:

Drainage Area = 0.54 mi ²	
1Q10 = 0.0 cfs	High Flow 1Q10 = 0.026 cfs
7Q10 = 0.0 cfs	High Flow 7Q10 = 0.030 cfs
30Q5 = 0.017 cfs	HM = 0.0 cfs

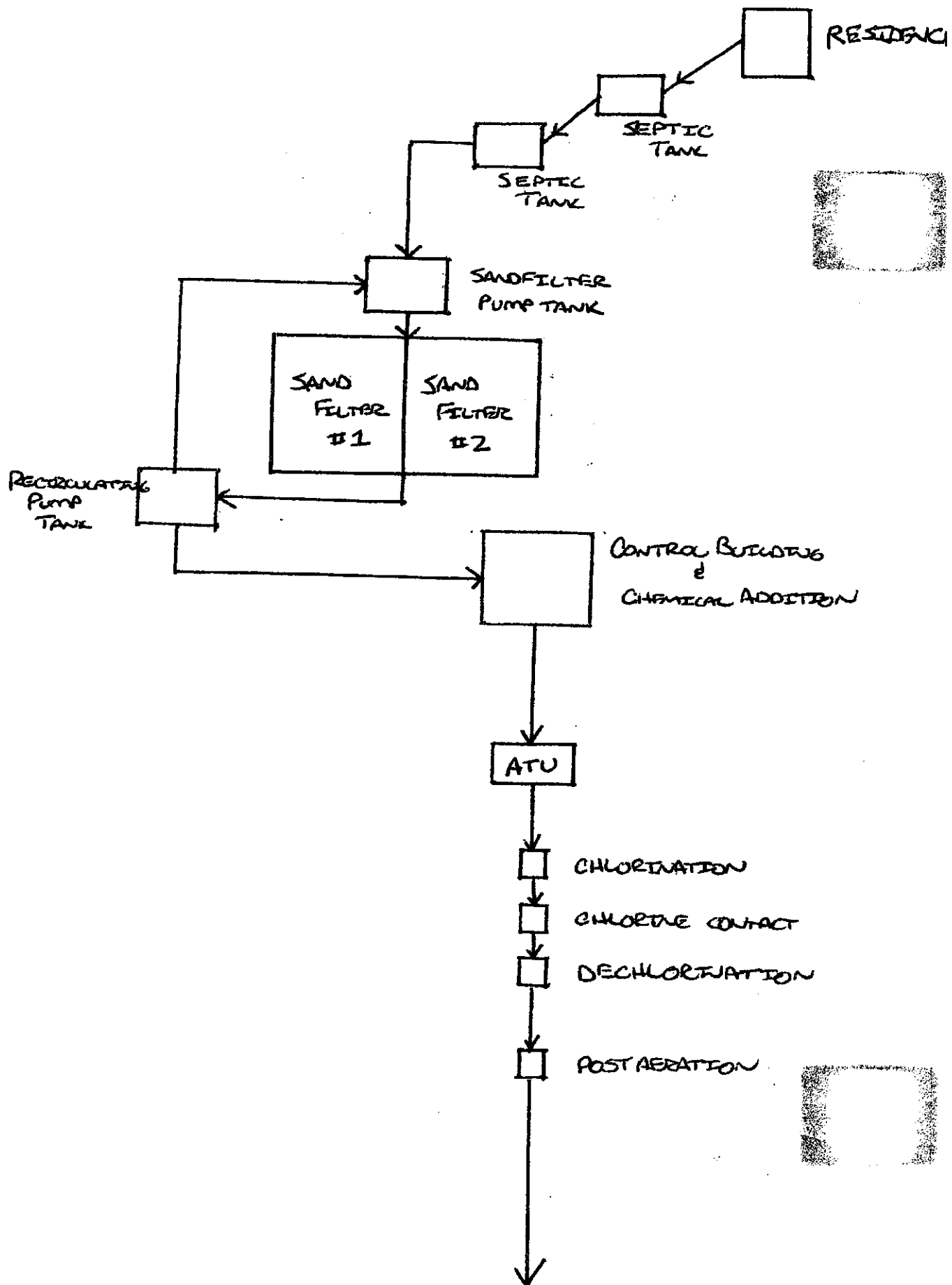
The high flow months are December through May.

This analysis assumes there are no significant discharges, withdrawals or springs influencing the flow in the Accokeek Creek upstream of the discharge point.

If there are any questions concerning this analysis, please let me know.

12/2/97

Because of the very small drainage area, 0.54 mi², and the small calculated flow, 0.030 cfs, in winter, staff believes there is no dry weather flow for this stream for the critical design periods. *Gates*



MEMORANDUM
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN REGIONAL OFFICE

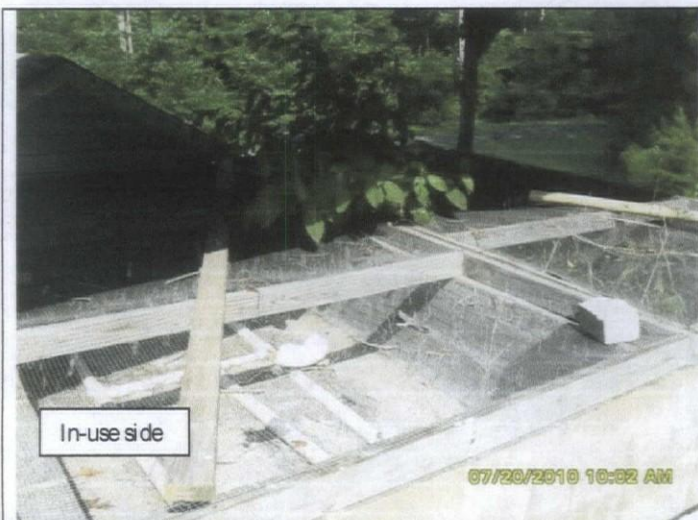
13901 Crown Court

Woodbridge, VA 22193

SUBJECT: Randall Residence STP
TO: Permit File VA0089630
FROM: Sharon Allen
DATE: August 4, 2010
COPIES: U drive: compliance monitoring

- This site visit was conducted to follow up on how the plant is doing. The facility has been without a licensed operator since March 2010.
- I arrived on site at 09:50 on July 20, 2010. Weather- warm and sunny.
- I spoke to Mr. Randall's father-in-law. He said Mr. Randall was not in and would probably not be back until after 5:00. I handed him a copy of the NOV (dated June 2010) and my card and asked Mr. Randall to call me. I received permission to look at the STP.
- Photos by S. Allen.
- The working side of the filter looked good- there was no standing water or indications of other problems. The unused side of the filter still had plants growing in it (photo 1).
- The door to the chemical room/control room was locked, so I could not check the alum feed system or the plant log book.
- The Multi-flow that is being used as a settling tank for Phosphorous removal had some solids in it, but appeared to be functioning adequately.
- The chlorine tablet feeder had chlorine tablets in one tube (photo 3). However, there were no dechlorination tablets in the dechlorination tube feeder.
- The effluent pump was not on, so there was no discharge flow from the plant.

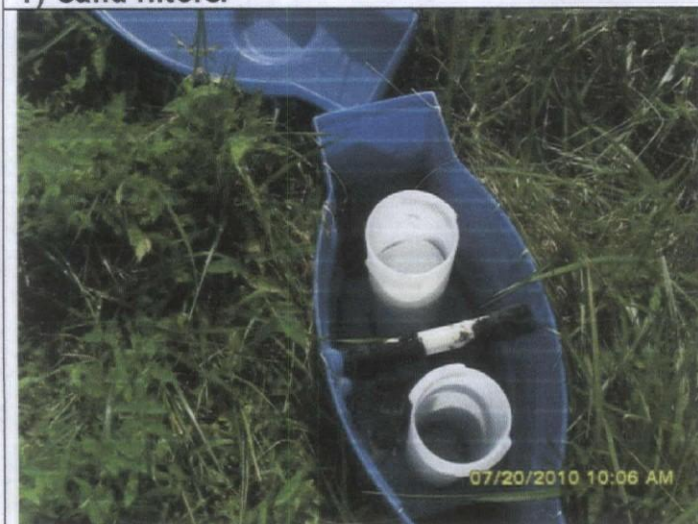
- The grounds overall are well maintained. There is some tall grass and weeds right around the process units that should be trimmed (photo 4).
- The area around Outfall 001 is overgrown. An opening through the plants and branches should be maintained for easy access to the plant's discharge pipe.
- There is a small eroded channel in the stream bank between the outfall pipe and the receiving stream. This does not appear to have a detrimental effect on the stream bank or receiving stream.
- No problems noted in the receiving stream.
- Departed 1005
- I spoke to Mr. Randall via telephone on July 21, 2010.
 - He said he and his wife are doing the maintenance themselves. They are aware that the plants still need to be cleaned out of the filter, but has been too hot for them to do so.
 - He received new chlorine tablets from another small system owner who doesn't need them any more, and is keeping the tablet feeder stocked. I mentioned that the dechlor also needs to be kept stocked and Mr. Randall said he will see if dechlorination tablets are available from the person he received the chlorine tablets from.
 - He is attempting to develop a plan for keeping an operator, and intended to contact Dabney & Crooks to figure out what they can work out payment wise.
- I spoke to Doug Crooks on July 26, 2010. Mr Randall had not contacted him yet; he has not been to the plant since Dec 2009.



1) Sand filters.



2) Multi-flow- settling tank (P removal)



3) Chlorine tablet feeder.



4) Overview of lower system.



5) Outfall 001.



6) Eroded channel from 001 to stream.

To: Joan C. Crowther
From: Katie Conaway

Date: November 6, 2012
Subject: Planning Statement for Walk Residence Wastewater Treatment Plant
Permit Number: VA0089630

Information for Outfall 001:

Discharge Type: Municipal
Discharge Flow: 0.0008 MGD
Receiving Stream: Accokeek Creek, UT
Latitude / Longitude: 38°26'49" / -77°28'06"
Rivermile: 0.22
Streamcode: 1aXHZ
Waterbody: VAN-A29R
Water Quality Standards: Section 1b; Class III, Special Standards b
Drainage Area: 0.54 mi²

1. Please provide water quality monitoring information for the receiving stream segment. If there is not monitoring information for the receiving stream segment, please provide information on the nearest downstream monitoring station, including how far downstream the monitoring station is from the outfall.

There is no monitoring data for the receiving stream, an Unnamed Tributary to Accokeek Creek (XHZ). The nearest downstream DEQ monitoring station with ambient water quality data is Station 1aACC006.13, located on Accokeek Creek at the Route 608 bridge crossing. Station 1aACC006.13 is located approximately 8.9 rivermiles downstream from Outfall 001. The following is the water quality summary for this segment of Accokeek Creek, as taken from the Draft 2012 Integrated Report*:

Class III, Section 1b, special stds. b.

DEQ ambient water quality monitoring station 1aACC006.13, at Route 608. Citizen monitoring station 1aACC-SCRAVEN-ALL.

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. The aquatic life and wildlife uses are considered fully supporting. The fish consumption use was not assessed.

** The Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently being finalized and prepared for release.*

2. Does this facility discharge to a stream segment on the 303(d) list? If yes, please fill out Table A.

No.

3. Are there any downstream 303(d) listed impairments that are relevant to this discharge? If yes, please fill out Table B.

Table B. Information on Downstream 303(d) Impairments and TMDLs

Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA	TMDL Schedule
<i>Impairment Information in the 2012 Integrated Report</i>							
Accokeek Creek	Recreation	<i>E. coli</i>	6.55 miles	No	N/A	N/A	2013**

**The Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently being finalized and prepared for release.*

***The Bacteria TMDL for Accokeek Creek is currently under development and will be finished in 2013. The TMDL will include a WLA for this facility in terms of *E. coli*. The draft WLA for this facility is 1.39E+09 cfu/year of *E. coli*.*

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

5. Fact Sheet Requirements – Please provide information regarding any drinking water intakes located within a 5 mile radius of the discharge point.

There are two public water supply intakes within a 5 mile radius of this facility's outfall:

Abel Lake Water Treatment Plant Intake, located on Potomac Creek
Smith Lake Intake, located on Aquia Creek

However, it should be noted that neither of these intakes are located downstream of the Accokeek Creek watershed.

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Walk Residence STP

Permit No.: VA0089630

Receiving Stream: Accotlee Creek, UT

Version: OWP Guidance Memo 00-2011 (8/24/00)

Attachment 5

Stream Information

Mean Hardness (as CaCO₃) =
 90% Temperature (Annual) =
 90% Temperature (Wet season) =
 90% Maximum pH =
 10% Maximum pH =
 Tier Designation (1 or 2) =
 Public Water Supply (PWS) Y/N? =
 Trout Present Y/N? =
 Early Life Stages Present Y/N? =

Stream Flows

1Q10 (Annual) =
 7Q10 (Annual) =
 30Q10 (Annual) =
 1Q10 (Wet season) =
 30Q10 (Wet season) =
 30Q5 =
 Harmonic Mean =

Mixing Information

Annual - 1Q10 Mix =
 - 7Q10 Mix =
 - 30Q10 Mix =
 Wet Season - 1Q10 Mix =
 - 30Q10 Mix =

Effluent Information

Mean Hardness (as CaCO₃) =
 90% Temp (Annual) =
 90% Temp (Wet season) =
 90% Maximum pH =
 10% Maximum pH =
 Discharge Flow =

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acetophenone	0	-	-	na	9.9E+02	-	-	na	9.9E+02	-	-	-	-	-	-	-	-	-	-	-	-
Acrolein	0	-	-	na	9.3E+00	-	-	na	9.3E+00	-	-	-	-	-	-	-	-	-	-	-	-
Acrylonitrile ^c	0	-	-	na	2.5E+00	-	-	na	2.5E+00	-	-	-	-	-	-	-	-	-	-	-	-
Aldrin ^c	0	3.0E+00	-	na	5.0E-04	3.0E+00	-	na	5.0E-04	-	-	-	-	-	-	-	-	3.0E+00	-	na	5.0E-04
Amonia N (mg/l) (Yearly)	0	2.36E+01	2.44E+00	na	-	2.36E+01	2.44E+00	na	-	-	-	-	-	-	-	-	-	2.36E+01	2.44E+00	na	-
Ammonia-N (mg/l) (High Flow)	0	2.36E+01	4.66E+00	na	-	2.36E+01	4.66E+00	na	-	-	-	-	-	-	-	-	-	2.36E+01	4.66E+00	na	-
Anthracene	0	-	-	na	4.0E+04	-	-	na	4.0E+04	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	0	-	-	na	6.4E+02	-	-	na	6.4E+02	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	0	3.4E+02	1.5E+02	na	-	3.4E+02	1.5E+02	na	-	-	-	-	-	-	-	-	-	3.4E+02	1.5E+02	na	-
Barium	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene ^c	0	-	-	na	5.1E+02	-	-	na	5.1E+02	-	-	-	-	-	-	-	-	-	-	-	-
Benzidine ^c	0	-	-	na	2.0E-03	-	-	na	2.0E-03	-	-	-	-	-	-	-	-	-	-	-	-
Benzo (a) anthracene ^c	0	-	-	na	1.8E-01	-	-	na	1.8E-01	-	-	-	-	-	-	-	-	-	-	-	-
Benzo (b) fluoranthene ^c	0	-	-	na	1.8E-01	-	-	na	1.8E-01	-	-	-	-	-	-	-	-	-	-	-	-
Benzo (k) fluoranthene ^c	0	-	-	na	1.8E-01	-	-	na	1.8E-01	-	-	-	-	-	-	-	-	-	-	-	-
Benzo (a) pyrene ^c	0	-	-	na	1.8E-01	-	-	na	1.8E-01	-	-	-	-	-	-	-	-	-	-	-	-
Bis(2-Chloroethyl) Ether ^c	0	-	-	na	5.3E+00	-	-	na	5.3E+00	-	-	-	-	-	-	-	-	-	-	-	-
Bis(2-Chloroisopropyl) Ether	0	-	-	na	6.5E+04	-	-	na	6.5E+04	-	-	-	-	-	-	-	-	-	-	-	-
Bis 2-Ethylhexyl Phthalate ^c	0	-	-	na	2.2E+01	-	-	na	2.2E+01	-	-	-	-	-	-	-	-	-	-	-	-
Bromofom ^c	0	-	-	na	1.4E+03	-	-	na	1.4E+03	-	-	-	-	-	-	-	-	-	-	-	-
Butybenzylphthalate	0	-	-	na	1.9E+03	-	-	na	1.9E+03	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0	8.2E-01	3.8E-01	na	-	8.2E-01	3.8E-01	na	-	-	-	-	-	-	-	-	-	8.2E-01	3.8E-01	na	-
Carbon Tetrachloride ^c	0	-	-	na	1.6E+01	-	-	na	1.6E+01	-	-	-	-	-	-	-	-	-	-	-	-
Chlordane ^c	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	-	-	-	-	-	-	-	-	2.4E+00	4.3E-03	na	-
Chlordane ^c	0	8.6E+05	2.3E+05	na	-	8.6E+05	2.3E+05	na	-	-	-	-	-	-	-	-	-	8.6E+05	2.3E+05	na	-
Chlordane	0	1.9E+01	1.1E+01	na	-	1.9E+01	1.1E+01	na	-	-	-	-	-	-	-	-	-	1.9E+01	1.1E+01	na	-
Chlorobenzene	0	-	-	na	1.6E+03	-	-	na	1.6E+03	-	-	-	-	-	-	-	-	-	-	-	-

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane ^c	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	--	--
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	1.8E+02	2.4E+01	na	--	1.8E+02	2.4E+01	na	--	--	--	--	--	--	--	--	--	1.8E+02	2.4E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene ^c	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	--
Copper	0	3.6E+00	2.7E+00	na	--	3.6E+00	2.7E+00	na	--	--	--	--	--	--	--	--	--	3.6E+00	2.7E+00	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	--
DDO ^c	0	--	--	na	3.1E+03	--	--	na	3.1E+03	--	--	--	--	--	--	--	--	--	--	na	--
DDE ^c	0	--	--	na	2.2E+03	--	--	na	2.2E+03	--	--	--	--	--	--	--	--	--	--	na	--
DDT ^c	0	1.1E+00	1.0E-03	na	2.2E+03	1.1E+00	1.0E-03	na	2.2E+03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	--
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene ^c	0	--	--	na	1.8E+01	--	--	na	1.8E+01	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	--
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	--	--	--	--	--	--	--	--	na	--
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	--	--	--	--	--	--	--	--	na	--
3,3-Dichlorobenzidine ^c	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	na	--
Dichlorobromomethane ^c	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloroethane ^c	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	--
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	--	--	na	--
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	--
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	--	--	--	--	--	--	--	--	na	--
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane ^c	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	--
1,3-Dichloropropene ^c	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	na	--
Dieldrin ^c	0	2.4E-01	5.6E-02	na	5.4E+04	2.4E-01	5.6E-02	na	5.4E+04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	--
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	--	--	--	--	--	--	--	--	na	--
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	--	--	--	--	--	--	--	--	na	--
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	--	--	--	--	--	--	--	--	na	--
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	--	--	--	--	--	--	--	--	na	--
2,4-Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	--
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	--	--	--	--	--	--	--	--	na	--
2,4-Dinitrotoluene ^c	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	na	--
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E+08	--	--	na	5.1E+08	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Diphenylhydrazine ^c	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	na	--
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	--
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	--
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	--
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	--
Endrin Aldehyde	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH				
Ethylbenzene	0	-	-	na	2.1E+03	-	-	na	2.1E+03	-	-	-	-	-	-	-	-	-	na	2.1E+03	
Fluoranthene	0	-	-	na	1.4E+02	-	-	na	1.4E+02	-	-	-	-	-	-	-	-	-	na	1.4E+02	
Fluorene	0	-	-	na	5.3E+03	-	-	na	5.3E+03	-	-	-	-	-	-	-	-	-	na	6.3E+03	
Foaming Agents	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	na	-	
Guthion	0	-	1.0E-02	na	-	1.0E-02	na	-	-	-	-	-	-	-	-	-	-	-	na	-	
Heptachlor °	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	-	-	-	-	-	-	-	-	-	na	-	
Heptachlor Epoxide °	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	-	-	-	-	-	-	-	-	-	na	-	
Hexachlorobenzene °	0	-	-	na	2.9E-03	-	-	na	2.9E-03	-	-	-	-	-	-	-	-	-	na	-	
Hexachlorobutadiene °	0	-	-	na	1.8E+02	-	-	na	1.8E+02	-	-	-	-	-	-	-	-	-	na	-	
Hexachlorocyclohexane Alpha-BHC °	0	-	-	na	4.9E-02	-	-	na	4.9E-02	-	-	-	-	-	-	-	-	-	na	-	
Hexachlorocyclohexane Beta-BHC °	0	-	-	na	1.7E-01	-	-	na	1.7E-01	-	-	-	-	-	-	-	-	-	na	-	
Hexachlorocyclohexane Gamma-BHC ° (Lindane)	0	9.9E-01	na	na	1.8E+00	9.9E-01	-	na	1.8E+00	-	-	-	-	-	-	-	-	-	na	-	
Hexachlorocyclopentadiene	0	-	-	na	1.1E+03	-	-	na	1.1E+03	-	-	-	-	-	-	-	-	-	na	-	
Hexachloroethane °	0	-	-	na	3.3E+01	-	-	na	3.3E+01	-	-	-	-	-	-	-	-	-	na	-	
Hydrogen Sulfide	0	2.0E+00	na	na	-	2.0E+00	na	na	-	-	-	-	-	-	-	-	-	-	na	-	
Indeno (1,2,3-cd) pyrene °	0	-	-	na	1.8E-01	-	-	na	1.8E-01	-	-	-	-	-	-	-	-	-	na	-	
Ion	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	na	-	
Isophorone °	0	-	-	na	9.6E+03	-	-	na	9.6E+03	-	-	-	-	-	-	-	-	-	na	-	
Kepone	0	-	0.0E+00	na	-	0.0E+00	na	-	-	-	-	-	-	-	-	-	-	-	na	-	
Lead	0	2.0E+01	2.3E+00	na	-	2.0E+01	2.3E+00	na	-	-	-	-	-	-	-	-	-	-	na	-	
Malthion	0	-	1.0E-01	na	-	1.0E-01	na	-	-	-	-	-	-	-	-	-	-	-	na	-	
Manganese	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-	
Mercury	0	1.4E+00	7.7E-01	-	-	1.4E+00	7.7E-01	-	-	-	-	-	-	-	-	-	-	-	na	-	
Methyl Bromide	0	-	-	na	1.5E+03	-	-	na	1.5E+03	-	-	-	-	-	-	-	-	-	na	-	
Methylene Chloride °	0	-	-	na	5.9E+03	-	-	na	5.9E+03	-	-	-	-	-	-	-	-	-	na	-	
Methoxychlor	0	-	3.0E-02	na	-	3.0E-02	na	-	-	-	-	-	-	-	-	-	-	-	na	-	
Mirex	0	-	0.0E+00	na	-	0.0E+00	na	-	-	-	-	-	-	-	-	-	-	-	na	-	
Nickel	0	5.6E+01	6.3E+00	na	4.6E+03	5.6E+01	6.3E+00	na	4.6E+03	-	-	-	-	-	-	-	-	-	na	-	
Nitrate (as N)	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-	
Nitrobenzene	0	-	-	na	6.9E+02	-	-	na	6.9E+02	-	-	-	-	-	-	-	-	-	na	-	
N-Nitrosodimethylamine °	0	-	-	na	3.0E+01	-	-	na	3.0E+01	-	-	-	-	-	-	-	-	-	na	-	
N-Nitrosodiphenylamine °	0	-	-	na	6.0E+01	-	-	na	6.0E+01	-	-	-	-	-	-	-	-	-	na	-	
N-Nitrosodi-n-propylamine °	0	-	-	na	5.1E+00	-	-	na	5.1E+00	-	-	-	-	-	-	-	-	-	na	-	
Nonylphenol	0	2.8E+01	6.6E+00	-	-	2.8E+01	6.6E+00	na	-	-	-	-	-	-	-	-	-	-	na	-	
Parathion	0	6.5E-02	1.3E-02	na	-	6.5E-02	1.3E-02	na	-	-	-	-	-	-	-	-	-	-	na	-	
PCB Total °	0	-	1.4E-02	na	6.4E-04	-	1.4E-02	na	6.4E-04	-	-	-	-	-	-	-	-	-	na	-	
Pentachlorophenol °	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	5.9E-03	na	3.0E+01	-	-	-	-	-	-	-	-	-	na	-	
Phenol	0	-	-	na	8.6E+05	-	-	na	8.6E+05	-	-	-	-	-	-	-	-	-	na	-	
Pyrene	0	-	-	na	4.0E+03	-	-	na	4.0E+03	-	-	-	-	-	-	-	-	-	na	-	
Radionuclides	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	na	-	
Gross Alpha Activity (pCi/L)	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	na	-	
Beta and Photon Activity (mrem/yr)	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	na	-	
Radium 226 + 228 (pCi/L)	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	na	-	
Uranium (ug/l)	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	na	-	

Parameter (µg/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable Silver	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03	--	--	--	--	2.0E+01	6.0E+00	na	4.2E+03	--	--	na	--
Sulfate	0	3.2E-01	--	na	--	3.2E-01	--	na	--	--	--	--	--	3.2E-01	--	na	--	--	--	na	--
1,1,2,2-Tetrachloroethane ^c	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	na	4.0E+01	--	--	na	--
Tetrachloroethylene ^c	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	na	3.3E+01	--	--	na	--
Thallium	0	--	--	na	4.7E-01	--	--	na	4.7E-01	--	--	--	--	--	--	na	4.7E-01	--	--	na	--
Toluene	0	--	--	na	6.0E+03	--	--	na	6.0E+03	--	--	--	--	--	--	na	6.0E+03	--	--	na	--
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na	--	--	--	na	--
Toxaphene ^c	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	7.3E-01	2.0E-04	na	2.8E-03	--	--	na	--
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	4.6E-01	7.2E-02	na	--	--	--	na	--
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.0E+01	--	--	--	--	--	--	na	7.0E+01	--	--	na	--
1,1,2-Trichloroethane ^c	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	na	1.6E+02	--	--	na	--
Trichloroethylene ^c	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	na	3.0E+02	--	--	na	--
2,4,6-Trichlorophenol ^c	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	na	2.4E+01	--	--	na	--
2,4,4,5-Trichlorophenoxy propionic acid (Silver)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na	--	--	--	na	--
Vinyl Chloride ^c	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	na	2.4E+01	--	--	na	--
Zinc	0	3.6E+01	3.6E+01	na	2.6E+04	3.6E+01	3.6E+01	na	2.6E+04	--	--	--	--	3.6E+01	3.6E+01	na	2.6E+04	--	--	na	--

Notes:

- All concentrations expressed as micrograms/liter (µg/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
- Antidegradation WLAs are based upon a complete mix.
Antidegradation Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 3Q010 for Chronic Ammonia, 7Q10 for Other Chronic, 3Q05 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0E+01
Barium	na
Cadmium	2.3E-01
Chromium III	1.4E+01
Chromium VI	6.4E+00
Copper	1.5E+00
Iron	na
Lead	1.4E+00
Manganese	na
Mercury	4.6E-01
Nickel	3.8E+00
Selenium	3.0E+00
Silver	1.3E-01
Zinc	1.4E+01

Note: do not use Q1's lower than the minimum Q1's provided in agency guidance

Walk pH Data
July 2007-September 2012

Monitoring Period		pH (SU)
7/1/12	9/30/12	6.7
4/1/12	6/30/12	7.9
1/1/12	3/31/12	7.2
10/1/11	12/31/11	6.4
7/1/11	9/30/11	6.4
4/1/11	6/30/11	
1/1/11	3/31/11	
10/1/10	12/31/10	7.3
7/1/10	9/30/10	6.6
4/1/10	6/30/10	
1/1/10	3/31/10	
10/1/09	12/31/09	7.4
7/1/09	9/30/09	
4/1/09	6/30/09	7.1
1/1/09	3/31/09	X
10/1/08	12/31/08	7.3
7/1/08	9/30/08	
4/1/08	6/30/08	7.2
10/1/07	12/31/07	7.2
7/1/07	9/30/07	7.2

90th Percentile = 7.38

1998 Ammonia Analysis

Analysis of the Randall SFH STP effluent data for ammonia as nitrogen (Nov-Mar)

The statistics for ammonia as nitrogen are:

Number of values	=	1
Quantification level	=	.2
Number < quantification	=	0
Expected value	=	10
Variance	=	36.00001
C.V.	=	.6
97th percentile	=	24.33418
Statistics used	=	Reasonable potential assumptions - Type 2 data

The WLAs for ammonia as nitrogen are:

Acute WLA	=	12.3
Chronic WLA	=	2.13
Human Health WLA	=	----

The limits are based on chronic toxicity and 1 samples/month.

Maximum daily limit	=	3.115285
Average monthly limit	=	3.115285

It is recommended that only the maximum daily limit be used.

DATA

10

units of measurement
mg/L

Analysis of the Randall SFH STP effluent data for
ammonia as nitrogen (Apr - Oct)

The statistics for ammonia as nitrogen (Apr - Oct) are:

Number of values	=	1
Quantification level	=	.2
Number < quantification	=	0
Expected value	=	10
Variance	=	36.00001
C.V.	=	.6
97th percentile	=	24.33418
Statistics used	=	Reasonable potential assumptions - Type 2 data

The WLAs for ammonia as nitrogen (Apr - Oct) are:

Acute WLA	=	11.9
Chronic WLA	=	2.06
Human Health WLA	=	----

The limits are based on chronic toxicity and 1 samples/month.

Maximum daily limit	=	3.012904
Average monthly limit	=	3.012904

It is recommended that only the maximum daily limit be used.

DATA
10

units of measurement
mg/L

2012 Ammonia Analysis

11/16/2012 3:29:55 PM

Facility = Walk Residence STP (winter November - March)

Chemical = Ammonia

Chronic averaging period = 30

WLAa = 23.6

WLAc = 4.66

Q.L. = .2

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = 9

Variance = 29.16

C.V. = 0.6

97th percentile daily values = 21.9007

97th percentile 4 day average = 14.9741

97th percentile 30 day average = 10.8544

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity

Maximum Daily Limit = 9.40234263532001

Average Weekly limit = 9.40234263532001

Average Monthly Limit = 9.40234263532001

The data are:

9

units of measurement
mg/L

ACCOTEEK CREEK AMBIENT WATER QUALITY MONITORING DATA

1AACC006.13 - ROUTE 608 - 38° 23' 03" / 77° 23' 03"

HUC 207001 - WATERSHED: VAN-A29R

Total Hardness Values (October 1990 through June 2003)

Date	Hardness (mg/L)
10/3/1990	28
2/13/1991	20
4/23/1991	16
10/2/1991	38
1/21/1992	18
4/15/1992	18
7/27/1992	26
10/20/1992	26
1/28/1993	18
4/21/1993	16
7/27/1993	48
10/25/1993	34
1/26/1994	24
4/5/1994	15
10/13/1994	20
2/13/1995	26
5/23/1995	20
8/22/1995	22
11/28/1995	26
2/27/1996	20
6/3/1996	56
8/29/1996	24
12/2/1996	24
3/18/1997	18.5
9/29/1997	10
3/24/1998	17.5
6/11/1998	22.6
12/16/1998	28
2/22/1999	110
7/14/1999	17.4
9/29/1999	39.8
11/16/1999	22.5
1/5/2000	27.5
3/16/2000	27
5/18/2000	34
9/21/2000	19.6
11/28/2000	30.6
1/25/2001	23.2
3/13/2001	20.1
5/3/2001	14.9
12/20/2001	6.4
2/7/2002	10
4/15/2002	33
2/6/2003	28.3
4/2/2003	21.5
6/10/2003	22.8

Average = 22.5

VaFWIS - Department of Game and Inland Fisheries

38,26,49.0 -77,28,06.0

is the Search Point

Submit

Cancel

Search Point

- ☒ Change to "clicked" map point
☐ Fixed at 38,26,49.0 - 77,28,06.0

Search Point is not
in center at map center

Show Position Rings

- ☒ Yes ☐ No
 1 mile and 1/4 mile at the Search Point

Show Search Area

- ☒ Yes ☐ No
 2 Search distance miles
 radius

Search Point is at
map center

Base Map Choices

Topography

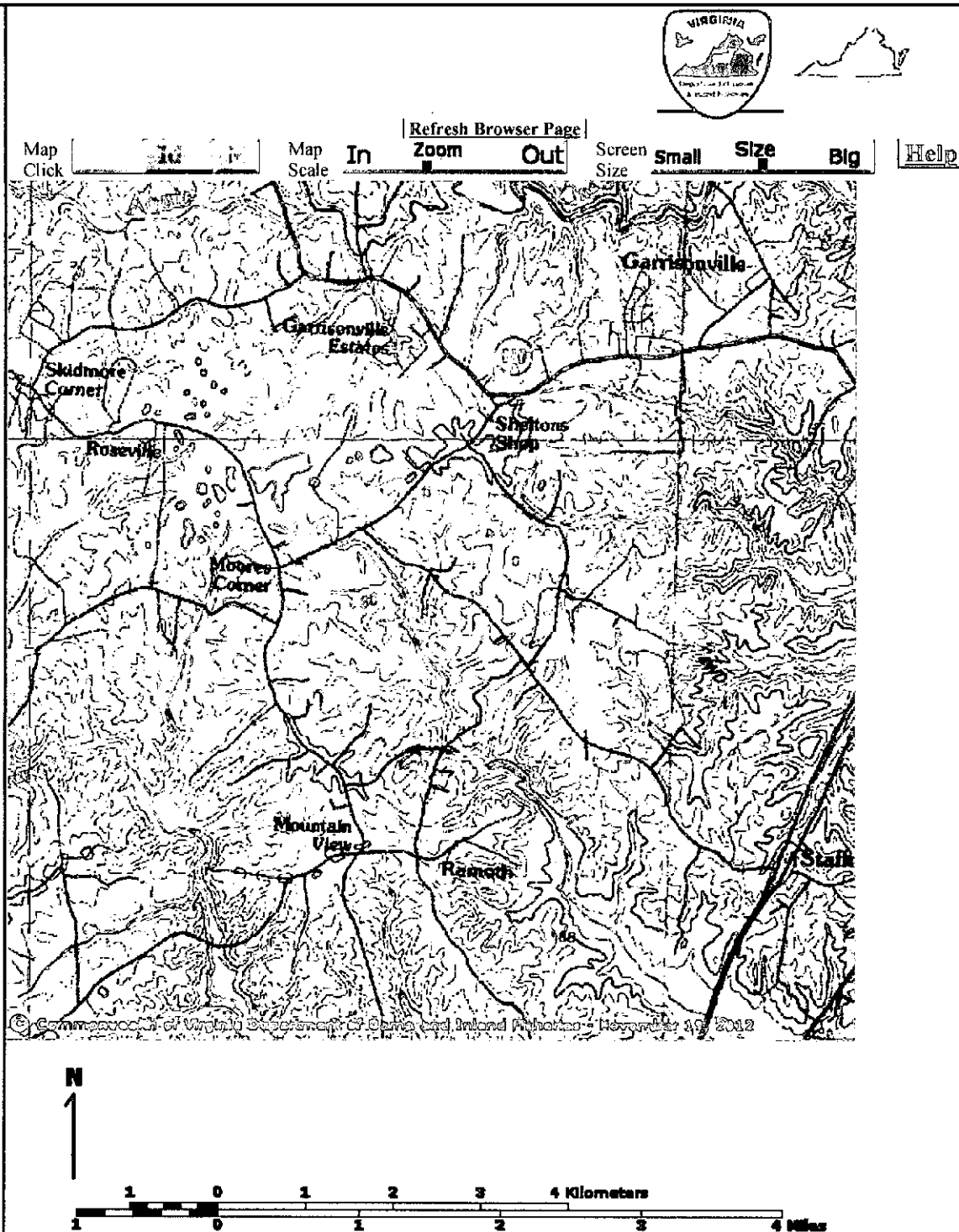
Map Overlay Choices

Current List: Position, Search

Map Overlay Legend

Position Rings
1 mile and 1/4
mile at the
Search Point

2 mile radius
Search Area



Point of Search 38,26,49.0 -77,28,06.0

Map Location 38,26,49.0 -77,28,06.0

- Select **Coordinate System**:
- ☒ Degrees, Minutes, Seconds Latitude - Longitude
 - ☐ Decimal Degrees Latitude - Longitude
 - ☐ Meters UTM NAD83 East North Zone
 - ☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see [Microsoft terraserver-usa.com](http://Microsoft.terraserver-usa.com) for details)

Map projection is UTM Zone 18 NAD 1983 with left 279796 and top 4263092. Pixel size is 16 meters. Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixels. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Attachment 10

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography acquired 2002 is from Virginia Base Mapping Program, Virginia Geographic
Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
<http://www.nationalgeographic.com/topo>
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2012-11-19 13:30:07 (qa/qc June 12, 2012 14:14 - tn=436120 dist=32181)

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VaFWIS Initial Project Assessment Report Compiled on 11/19/2012,[Help](#)

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Known or likely to occur within a **2 mile radius around point 38,26,49.0 -77,28,06.0**
in **179 Stafford County, VA**[View Map of
Site Location](#)432 Known or Likely Species ordered by Status Concern for Conservation
(displaying first 20) (17 species with Status* or Tier I** or Tier II**)

<u>BOVA Code</u>	<u>Status*</u>	<u>Tier**</u>	<u>Common Name</u>	<u>Scientific Name</u>	<u>Confirmed</u>	<u>Database(s)</u>
010032	FE	II	<u>Sturgeon, Atlantic</u>	Acipenser oxyrinchus		BOVA
060003	FESE	II	<u>Wedgemussel, dwarf</u>	Alasmodonta heterodon		BOVA,Habitat
040129	ST	I	<u>Sandpiper, upland</u>	Bartramia longicauda		BOVA
040293	ST	I	<u>Shrike, loggerhead</u>	Lanius ludovicianus		BOVA
040093	FSST	II	<u>Eagle, bald</u>	Haliaeetus leucocephalus		BOVA
040292	ST		<u>Shrike, migrant loggerhead</u>	Lanius ludovicianus migrans		BOVA
100248	FS	I	<u>Fritillary, regal</u>	Speyeria idalia idalia		BOVA
030063	CC	III	<u>Turtle, spotted</u>	Clemmys guttata		BOVA
010077		I	<u>Shiner, bridle</u>	Notropis bifrenatus		BOVA
040372		I	<u>Crossbill, red</u>	Loxia curvirostra		BOVA
040225		I	<u>Sapsucker, yellow-bellied</u>	Sphyrapicus varius		BOVA
040319		I	<u>Warbler, black-throated green</u>	Dendroica virens		BOVA
040052		II	<u>Duck, American black</u>	Anas rubripes		BOVA
040213		II	<u>Owl, northern saw-whet</u>	Aegolius acadicus	<u>Yes</u>	SppObs
040105		II	<u>Rail, king</u>	Rallus elegans		BOVA
040320		II	<u>Warbler, cerulean</u>	Dendroica cerulea		BOVA
040266		II	<u>Wren, winter</u>	Troglodytes troglodytes		BOVA
030068		III	<u>Turtle, eastern box</u>	Terrapene carolina carolina		BOVA
040037		III	<u>Bittern, least</u>	Ixobrychus exilis exilis		BOVA
040094		III	<u>Harrier, northern</u>	Circus cyaneus		BOVA

To view **All 432 species** [View 432](#)* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed;
FC=Federal Candidate; FS=Federal Species of Concern; CC=Collection Concern** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need;
III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation NeedBat Colonies or Hibernacula: **Not Known****Anadromous Fish Use Streams**

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters

N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Habitat Predicted for Aquatic WAP Tier I & II Species (2 Reaches)View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species

Stream Name	Tier Species						View Map
	Highest TE *	BOVA Code, Status *, Tier **, Common & Scientific Name					
(20700112)	FESE	060003	FESE	II	Wedgemussel, dwarf	Alasmidonta heterodon	Yes
Austin Run (20700112)	FESE	060003	FESE	II	Wedgemussel, dwarf	Alasmidonta heterodon	Yes

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Public Holdings:

N/A

Facility = Randall Wastewater Treatment Plant

Chemical = Chlorine

Chronic averaging period = 4

WLAa = 19

WLAc = 11

Q.L. = 100

samples/mo. = 1

samples/wk. = 1

units = ug/l

Summary of Statistics:

observations = 1

Expected Value = 200

Variance = 14400

C.V. = 0.6

97th percentile daily values = 486.683

97th percentile 4 day average = 332.758

97th percentile 30 day average = 241.210

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity

Maximum Daily Limit = 16.0883226245855

Average Weekly limit = 16.0883226245856

Average Monthly Limit = 16.0883226245856

The data are:

200

1/8/08
QC

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Stafford County, Virginia.

PUBLIC COMMENT PERIOD: XXX, 2013 to XXX, 2013

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Robert D. and Angela S. Walk, 50 Randall Road, Stafford VA 22554, VA0089630

NAME AND ADDRESS OF FACILITY: Walk Residence Sewage Treatment Plant, 50 Randall Road, VA 22554

PROJECT DESCRIPTION: Robert D. and Angela S. Walk have applied for a reissuance of a permit for the private Walk Residence Sewage Treatment Plant. The applicant proposes to treated sewage wastewaters from residential home at a rate of 0.0008 million gallons per day into a water body. The sludge will be disposed by transporting it to Aquia Advanced Wastewater Treatment Plant (VA0060968). The facility proposes to release the treated sewage in the unnamed tributary to Accotek Creek in Stafford County in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, CBOD_5 , Total Suspended Solids, Total Residual Chlorine, Total Phosphorus, Ammonia as N, Dissolved Oxygen, and *E. coli*.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Joan C. Crowther

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3925 E-mail: joan.crowther@deq.virginia.gov Fax: (703) 583-3821

**State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review**

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Walk Residence STP
NPDES Permit Number:	VA0089630
Permit Writer Name:	Joan C. Crowther
Date:	11/19/12

Major []

Minor [x]

Industrial []

Municipal [x]

I.A. Draft Permit Package Submittal Includes:

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?		X	
8. Whole Effluent Toxicity Test summary and analysis?			X
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?		X	
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?	X		
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?		X	
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?	X		
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?		X	

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs (To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration		Yes	No	N/A
1.	Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2.	Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements		Yes	No	N/A
1.	Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2.	Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (POTWs)		Yes	No	N/A
1.	Does the permit contain numeric limits for <u>ALL</u> of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2.	Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a.	If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3.	Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4.	Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5.	Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a.	If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits		Yes	No	N/A
1.	Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2.	Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?			X
3.	Does the fact sheet provide effluent characteristics for each outfall?	X		
4.	Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a.	If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	X		
b.	Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c.	Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	X		
d.	Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?		X	
e.	Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?	X		

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			X
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?		X	

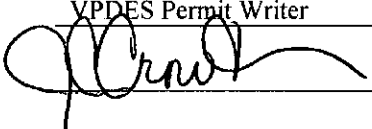
II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?		X	

II.F. Special Conditions – cont.	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?			X
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the “Nine Minimum Controls”?			X
b. Does the permit require development and implementation of a “Long Term Control Plan”?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?			X

II.G. Standard Conditions		Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?		X		
List of Standard Conditions – 40 CFR 122.41				
Duty to comply	Property rights	Reporting Requirements		
Duty to reapply	Duty to provide information	Planned change		
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance		
not a defense	Monitoring and records	Transfers		
Duty to mitigate	Signatory requirement	Monitoring reports		
Proper O & M	Bypass	Compliance schedules		
Permit actions	Upset	24-Hour reporting		
		Other non-compliance		
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?			X	

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Joan C. Crowther</u>
Title	<u>VPDES Permit Writer</u>
Signature	
Date	<u>11/19/12</u>